IEC 62106-9

Edition 1.0 2021-05

INTERNATIONAL STANDARD

Radio data system (RDS) –VHF/FM sound broadcasting in the frequency range from 64,0 MHz to 108,0 MHz –
Part 9: RBDS – RDS variant used in North America

INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

ICS 33.060.01; 33.160.20; 33.170

ISBN 978-2-8322-9785-8

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FOREWORD

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International Standard IEC 62106-9 has been prepared by technical area 1: Terminals for audio, video and data services and contents, of IEC technical committee 100: Audio, video and multimedia systems and equipment.

This first edition, together with IEC 62106-1, IEC 62106-2, IEC 62106-3, IEC 62106-4, IEC 62106-5, IEC 62106-6 and IEC 62106-10, cancels and replaces IEC 62106:2015, and constitutes a technical revision.

IEC 62106-9 cancels and replaces US NRSC-4-B, National Radio Systems Committee – United States RBDS standard, published in 2011.

The text of this International Standard is based on the following documents:

Draft	Report on voting
100/3399/CDV	100/3553/RVC

Full information on the voting for its approval can be found in the report on voting indicated in the above table.

A list of all parts in the IEC 62106 series, published under the general title *Radio data system (RDS) – VHF/FM sound broadcasting in the frequency range from 64,0 MHz to 108,0 MHz*, can be found on the IEC website.

The language used for the development of this International Standard is English.

This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement, available at www.iec.ch/members_experts/refdocs. The main document types developed by IEC are described in greater detail at www.iec.ch/standardsdev/publications.

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under webstore.iec.ch in the data related to the specific document. At this date, the document will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

INTRODUCTION

Since the mid-1980s, a fascinating development has taken place. Most of the multimedia applications and standards have been created or redefined significantly. Hardware has become extremely powerful with dedicated software and middleware. In the mid-1980s, Internet as well as its protocols did not exist. Navigation systems became affordable in the late 1990s, and a full range of attractive smartphones now exist. The computing power of all these new products is comparable with that of the mainframe installations in that era.

Listener expectations have grown faster than the technology. Visual experience is now very important, like the Internet look and feel. Scrolling text or delivering just audio is nowadays perceived as insufficient for FM radio, specifically for smartphone users. New types of radio receivers with added value features are therefore required. RDS has so far proven to be very successful.

FM radio with RDS is an analogue-digital hybrid system, which is still a valid data transmission technology and only the applications need adaptation. Now the time has come to solve the only disadvantage, the lack of sufficient data capacity. With RDS2, the need to increase the data capacity can be fulfilled.

RDS was introduced in the early 1980s. During the introductory phase in Europe, the car industry became very involved and that was the start of an extremely successful roll-out. Shortly afterwards, RDS (RBDS) was launched in the USA. [1, 2, 3, 4, 5, 6, 7] [1]

The RDS Forum has investigated a solution to the issue of limited data capacity. For RDS2, both sidebands around the RDS 57 kHz subcarrier can be repeated a few times, up to three, centred on additional subcarriers higher up in the FM multiplex whike still remaining compatible with the ITU Recommendations.

The core elements of RDS2 are the additional subcarriers, which will enable a significant increase of RDS data capacity to be achieved and then only new additional data applications will have to be created, using the RDS-ODA feature, which has been part of the RDS standard IEC 62106 for many years.

In order to update IEC 62106:2015 to the specifications of RDS2, the original document has been restructured as follows:

Part 1: RDS system: Modulation characteristics and baseband coding

Part 2: RDS message format, coding and definition of RDS features

Part 3: Coding and registration of Open Data Applications ODAs

Part 4: Registered code tables

Part 5: Marking of RDS and RDS2 devices

Part 6: Compilation of technical specifications for Open Data Applications in the public domain

Part 9: RBDS – RDS variant used in North America

Part 10: Universal Encoder Communication Protocol UECP

The original specifications of the RDS system have been maintained and the extra functionalities of RDS2 have been added.

Obsolete or unused functions from the original RDS standard have been deleted.

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1 Numbers in square brackets refer to the Bibliography.

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1 Scope

This part of IEC 62106 specifies the Radio Broadcast Data System (RBDS), which is an RDS-compatible variant used in countries of North America. RBDS was first standardized by the U.S. National Radio Systems Committee (NRSC) in 1993 and subsequently revised in 1998, 2004, 2005 and 2011[2]. With the publication of this edition of IEC 62106, the RDS and RBDS standards are now harmonized into a single document.

The frequency range of operation (64,0 MHz to 108,0 MHz as indicated by the title of this document) varies according to regional regulatory authority. The U.S. range is 88 MHz to 108 MHz, as set by the U.S. Federal Communications Commission. [8]

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 62106 (all parts), *Radio Data System (RDS) – VHF/FM sound broadcasting in the frequency range from 64,0 MHz to 108,0 MHz*

IEC 62106-2:2021, *Radio data system (RDS) – VHF/FM sound broadcasting in the frequency range from 64,0 MHz to 108,0 MHz – Part 2: Message format: coding and definition of RDS features*

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2 The NRSC (www.nrscstandards.org) is jointly sponsored by the National Association of Broadcasters (NAB) and the Consumer Technology Association (CTA). Its purpose is to study and make recommendations for technical standards that relate to radio broadcasting and the reception of radio broadcast signals. See www.nrscstandards.org.